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UNITED STATES DISTRICT COURT

DISTRICT OF OREGON

PENDLETON DIVISION

OREGON FIREARMS FEDERATION, INC., et al., v. TINA KOTEK, et al., and	Plaintiffs, Defendants,
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Case No. 2:22-cv-01815-IM (lead case)
3:22-cv-01859-IM (trailing case)
3:22-cv-01862-IM (trailing case)
3:22-cv-01869-IM (trailing case)

**DECLARATION OF LUCY P. ALLEN IN
SUPPORT OF DEFENDANTS' OPPOSITION
TO PLAINTIFFS' MOTION FOR
PRELIMINARY INJUNCTION**

OREGON ALLIANCE FOR GUN SAFETY,
Intervenor-Defendant.

MARK FITZ, et al.,
Plaintiffs,
v.
ELLEN F. ROSENBLUM, et al.,
Defendants.

KATERINA B. EYRE, et al.,
Plaintiffs,
v.
ELLEN F. ROSENBLUM, et al.,
Defendants.

DANIEL AZZOPARDI, et al.,
Plaintiffs,
v.
ELLEN F. ROSENBLUM, et al.,
Defendants.

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Pursuant to 28 U.S.C. § 1746, I, Lucy P. Allen, the undersigned, declare under penalty of perjury that the following is true and correct:

I. SCOPE OF ASSIGNMENT

1. I am over the age of eighteen (18) years, competent to testify to the matters contained in this declaration, and testify based on my personal knowledge and information. I have been asked by the Counsel for State Defendants of Oregon to address the following issues: (a) the number of rounds of ammunition fired by individuals using a gun in self-defense, and (b) the outcomes when large-capacity magazines are used in public mass shootings, including the associated number of casualties. I have also been asked to review and comment on portions of the Declaration of Gary Kleck, dated January 5, 2023 (the “Kleck Declaration”) that relate to this Declaration.

II. QUALIFICATIONS AND REMUNERATION

2. I am a Managing Director of NERA Economic Consulting (“NERA”), a member of NERA’s Securities and Finance Practice and Chair of NERA’s Product Liability and Mass Torts Practice. NERA provides practical economic advice related to highly complex business and legal issues arising from competition, regulation, public policy, strategy, finance, and litigation. NERA was established in 1961 and now employs approximately 500 people in more than 20 offices worldwide.

3. In my over 25 years at NERA, I have been engaged as an economic consultant or expert witness in numerous projects involving economics and statistics. I have been qualified as an expert and testified in court on various economic and statistical issues relating to the flow of guns into the criminal market. I have testified at trials in Federal and State Courts, before the New York City Council Public Safety Committee, the American Arbitration Association and the Judicial Arbitration Mediation Service, as well as in depositions.

4. I have an A.B. from Stanford University, an M.B.A. from Yale University, and M.A. and M. Phil. degrees in Economics, also from Yale University. Prior to joining NERA, I was an Economist for both President George H. W. Bush's and President Bill Clinton's Council of Economic Advisers. My resume with recent publications and testifying experience is included as Exhibit A.

5. NERA is being compensated for time spent by me and my team at standard billing rates and for out-of-pocket expenses at cost. NERA currently bills for my time at \$1,150 per hour. NERA's fees are not in any way contingent upon the content of my opinions or the outcome of this matter.

III. NUMBER OF ROUNDS FIRED IN SELF-DEFENSE

6. Plaintiffs claim that the large capacity magazines (magazines capable of holding more than ten rounds, "Large-Capacity Magazines" or "LCMs") covered by Oregon's Ballot Measure 114 ("Measure 114") are commonly used for lawful purposes, including for self-defense.¹

7. The number of rounds commonly needed by individuals to defend themselves cannot be practically or ethically determined with controlled scientific experiments and there is no source that systematically tracks or maintains data on the number of rounds fired by individuals in self-defense. Due to these limitations, I have analyzed available data sources to estimate the number of rounds fired by individuals to defend themselves. In particular, I have analyzed data from the NRA Institute for Legislative Action, as well as my own study of news reports on incidents of self-defense with a firearm. In all, I have analyzed almost 1,000 incidents

¹ See, for example, Oregon Firearms Federation Plaintiffs' Second Amended Complaint for Declaratory and Injunctive Relief ("OFF's Second Amended Complaint"), filed January 4, 2023, ¶¶2-3, and Eyre Plaintiffs' First Amended Complaint ("Eyre's First Amended Complaint"), filed January 4, 2023, ¶¶14-15.

of self-defense with a firearm and found that it is extremely rare for a person, when using a firearm in self-defense, to fire more than ten rounds.

8. The NRA maintains a database of “Armed Citizen” stories describing private citizens who have successfully defended themselves, or others, using a firearm (“NRA Armed Citizen database”). According to the NRA, the “Armed Citizen” stories “highlight accounts of law-abiding gun owners in America using their Second Amendment rights to defend self, home and family.”² Although the methodology used to compile the NRA Armed Citizen database of stories is not explicitly detailed by the NRA, the NRA Armed Citizen database is a useful data source in this matter for at least three reasons. First, the Armed Citizen database was the largest collection of accounts of citizen self-defense compiled by others that I was able to find.³ Second, the incidents listed in the Armed Citizen database highlight the very conduct that Plaintiffs claim the Oregon law impedes (*i.e.*, the use of firearms by law-abiding citizens for self-defense).⁴ Third, the Armed Citizen database is compiled by an entity that actively opposes restrictions on magazine capacity and restrictions on the possession and use of firearms in general.⁵ In light of the positions taken by the entity compiling the data, I would expect that any selection bias would be in favor of stories that put use of guns in self-defense in the best possible light and might highlight the apparent need of guns and/or multiple rounds in self-defense incidents.

9. My team and I performed an analysis of incidents in the NRA Armed Citizen database that occurred between January 2011 and May 2017.⁶ For each incident, the city/county,

² NRA Institute for Legislative Action, Armed Citizens, <https://www.nraila.org/gun-laws/armed-citizen/>, accessed May 28, 2017.

³ Note that in 2020, after the time my research was conducted, The Heritage Foundation began an online database of its own sample of defensive gun use incidents (<https://datavisualizations.heritage.org/firearms/defensive-gun-uses-in-the-us>).

⁴ OFF’s Second Amended Complaint, ¶¶2-3 and Eyre’s First Amended Complaint, ¶¶14-15.

⁵ See, for example, NRA Civil Rights Defense Fund website, <http://www.nradefensefund.org/current-litigation.aspx>, accessed October 12, 2018.

⁶ My collection and coding of the NRA Armed Citizen stories was last performed in mid-2017.

state, venue (whether the incident occurred on the street, in the home, or elsewhere) and the number of shots fired were tabulated.⁷ The information was gathered for each incident from both the NRA synopsis and, where available, an additional news story. An additional news story was found for over 95% of the incidents in the NRA Armed Citizen database.

10. According to this analysis of incidents in the NRA Armed Citizen database, it is extremely rare for a person, when using firearms in self-defense, to fire more than ten rounds. Out of 736 incidents, there were two incidents (0.3% of all incidents), in which the defender was reported to have fired more than 10 bullets.⁸ Defenders fired 2.2 shots on average.⁹ In 18.2% of incidents, the defender did not fire any shots. These incidents highlight the fact that in many instances defenders are able to defend themselves without firing any shots. For example, according to one of the incidents in the NRA Armed Citizen Database:

“A man entered a Shell station in New Orleans, La. and attempted to rob a cashier, by claiming he was carrying a gun. The cashier responded by retrieving a gun and leveling it at the thief, prompting the criminal to flee. (The Times Picayune, New Orleans, La. 09/02/15)”¹⁰

11. For incidents occurring in the home (56% of total), defenders fired an average of 2.1 shots, and fired no shots in 16.1% of incidents. For incidents occurring outside the home

⁷ The following incidents were excluded from the analysis: (1) duplicate incidents, (2) wild animal attacks, and (3) one incident where the supposed victim later pleaded guilty to covering up a murder. When the exact number of shots fired was not specified, we used the average for the most relevant incidents with known number of shots. For example, if the story stated that “shots were fired” this would indicate that at least two shots were fired and thus we used the average number of shots fired in all incidents in which two or more shots were fired and the number of shots was specified.

⁸ Note that the only two incidents with more than 10 bullets fired were added to the NRA Armed Citizen database in 2016 and 2017 after an earlier analysis that I had conducted of the database had been submitted to and cited by the Court in *Kolbe v. O'Malley*, Case No. CCB-13-2841 (Dkt. 79).

⁹ Note that the analysis is focused on shots fired when using a gun in self-defense and therefore the average includes instances when no shots are fired. If one calculates the average excluding incidents of self-defense with a gun without firing shots, the average is still low, 2.6 shots when at least one shot is fired.

¹⁰ “Gas station clerk scares off robber,” NRA-ILA Armed Citizen, September 9, 2015.

(44%) of total, defenders fired an average of 2.2 shots, and fired no shots in 20.9% of incidents.¹¹

The table below summarizes these findings:

Number of Shots Fired in Self-Defense Based on NRA Armed Citizen Incidents in the United States January 2011 - May 2017			
	Shots Fired by Individual in Self-Defense		
	Overall	Incidents in Home	Outside the Home
Average Number of Shots Fired	2.2	2.1	2.2
Number of Incidents with No Shots Fired	134	66	68
Percent of Incidents with No Shots Fired	18.2%	16.1%	20.9%
Number of Incidents with >10 Shots Fired	2	2	0
Percent of Incidents with >10 Shots Fired	0.3%	0.5%	0.0%
Notes and Sources:			
Data from NRA Armed Citizen database covering 736 incidents (of which 411 were in the home) from January 2011 through May 2017. Excludes duplicate incidents, wild animal attacks and one incident where the supposed victim later pleaded guilty to covering up a murder.			

12. We also performed the same analysis of the NRA Armed Citizen database limited to the 11 incidents that occurred in Oregon.¹² According to this analysis, defenders in Oregon fired 1.3 shots on average, and there were no incidents in which the defender was reported to have fired more than 10 bullets. In 36.4% of incidents, the defender did not fire any shots, and simply threatened the offender with a gun.

¹¹ A separate study of incidents in the NRA Armed Citizen database for an earlier period (the five-year period from 1997 through 2001) found similar results. Specifically, this study found that, on average, 2.2 shots were fired by defenders and that in 28% of incidents of armed citizens defending themselves the individuals fired no shots at all. See, Claude Werner, “The Armed Citizen – A Five Year Analysis,” <https://tacticalprofessor.files.wordpress.com/2014/12/tac-5-year-w-tables.pdf>, accessed January 26, 2023.

¹² There were 11 incidents in Oregon (7 of which were in the home) from January 2011 through May 2017.

13. In addition to our analysis of incidents in the NRA Armed Citizen database, we performed a systematic, scientific study of news reports on incidents of self-defense with a firearm in the home, focusing on the same types of incidents as the NRA stories and covering the same time period.¹³

14. To identify relevant news stories to include in our analysis, we performed a comprehensive search of published news stories using Factiva, an online news reporting service and archive owned by Dow Jones, Inc. that aggregates news content from nearly 33,000 sources.¹⁴ The search was designed to return stories about the types of incidents that are the focus of the NRA Armed Citizen database and that Plaintiffs claim the Oregon law impedes – in particular, the use of firearms for self-defense.¹⁵ The search identified all stories that contained the following keywords in the headline or lead paragraph: one or more words from “gun,” “shot,” “shoot,” “fire,” or “arm” (including variations on these keywords, such as “shooting” or “armed”), plus one or more words from “broke in,” “break in,” “broken into,” “breaking into,” “burglar,” “intruder,” or “invader” (including variations on these keywords) and one or more words from “home,” “apartment,” or “property” (including variations on these keywords).¹⁶ The search criteria match approximately 90% of the NRA stories on self-defense with a firearm in the

¹³ This analysis was initially conducted to research issues regarding self-defense in the home, which was a focus of federal Second Amendment jurisprudence before the 2022 *New York State Rifle & Pistol Association v. Bruen* Supreme Court decision. The analysis of the NRA Armed Citizen incidents described above indicates that the number of shots fired in self-defense outside the home is similar to those inside the home.

¹⁴ Factiva is often used for academic research. For example, a search for the term “Factiva” on Google Scholar yields over 28,000 results. As another example, a search on Westlaw yields at least 83 expert reports that conducted news searches using Factiva.

¹⁵ NRA Institute for Legislative Action, Armed Citizens, <https://www.nraila.org/gun-laws/armed-citizen/>, accessed May 28, 2017. See, also, OFF’s Second Amended Complaint, ¶¶2-3 and Eyre’s First Amended Complaint, ¶¶14-15.

¹⁶ The precise search string used was: (gun* or shot* or shoot* or fire* or arm*) and (“broke in” or “break in” or “broken into” or “breaking into” or burglar* or intrud* or inva*) and (home* or “apartment” or “property”). An asterisk denotes a wildcard, meaning the search includes words which have any letters in place of the asterisk. For example, a search for shoot* would return results including “shoots,” “shooter” and “shooting.” The search excluded duplicate stories classified as “similar” on Factiva.

home, and an analysis of the 10% of stories that are not returned by the search shows that the typical number of shots fired in these incidents was no different than in other incidents. The search covered the same period used in our analysis of incidents in the NRA Armed Citizen database (January 2011 to May 2017). The region for the Factiva search was set to “United States.” The search returned approximately 35,000 stories for the period January 2011 to May 2017.¹⁷

15. Using a random number generator, a random sample of 200 stories was selected for each calendar year, yielding 1,400 stories in total.¹⁸ These 1,400 stories were reviewed to identify those stories that were relevant to the analysis, *i.e.*, incidents of self-defense with a firearm in or near the home. This methodology yielded a random selection of 200 news stories describing incidents of self-defense with a firearm in the home out of a population of approximately 4,800 relevant stories.¹⁹ Thus, out of the over 70 million news stories aggregated by Factiva between January 2011 and May 2017, approximately 4,800 news stories were on incidents of self-defense with a firearm in the home. We analyzed a random selection of 200 of these stories.

16. For each news story, the city/county, state and number of shots fired were tabulated. When tabulating the number of shots fired, we used the same methodology as we used

¹⁷ The effect of using alternative keywords was considered. For example, removing the second category (“broke in” or “break in” or “broken into” or “breaking into” or burglar* or intrud* or inva*) and including incidents in which the assailant was already inside the home and/or was known to the victim was considered. *A priori*, there was no reason to believe that a larger number of shots would be used in these incidents and based on an analysis of the NRA stories we found that the number of shots fired in incidents when defending against someone already in the home was not different than those with an intruder.

¹⁸ The random numbers were generated by sampling with replacement.

¹⁹ The approximately 4,800 relevant news stories were estimated by calculating the proportion of relevant news stories from the 200 randomly selected stories each year and applying that proportion to the number of results returned by the search for each year of the analysis. For example, in 2017, 33 out of 200 (17%) randomly selected news stories involved incidents of self-defense with a firearm in the home. Applying that proportion to the 1,595 results from the Factiva search in 2017 yields 263 relevant news stories in 2017. This process was repeated every year to arrive at a total of 4,841 relevant news stories from 2011-2017.

to analyze stories in the NRA Armed Citizen database.²⁰ We then identified other stories describing the same incident on Factiva based on the date, location and other identifying information, and recorded the number of times that each incident was covered by Factiva news stories.

17. To determine the average number of shots fired *per incident*, we first determined the average number of shots fired *per story* and then analyzed the number of stories per incident. According to our study of a random selection from approximately 4,800 relevant stories on Factiva describing incidents of self-defense with a firearm in the home, the average number of shots fired per story was 2.61. This is not a measure of the average shots fired *per incident*, however, because the number of stories covering an incident varies, and the variation is not independent of the number of shots fired. We found that there was a statistically significant relationship between the number of shots fired in an incident and the number of news stories covering an incident.²¹ We found that on average the more shots fired in a defensive gun use incident, the greater the number of stories covering an incident. For example, as shown in the table below, we found that incidents in Factiva news stories with zero shots fired were covered on average by 1.8 news stories, while incidents with six or more shots fired were covered on average by 10.4 different news stories.

²⁰ When the exact number of shots fired was not specified, we used the average for the most relevant incidents with known number of shots. For example, if the story stated that “shots were fired” this would indicate that at least two shots were fired and thus we used the average number of shots fired in all incidents in which two or more shots were fired and the number of shots was specified.

²¹ Based on a linear regression of the number of news stories as a function of the number of shots fired, the results were statistically significant at the 1% level (more stringent than the 5% level commonly used by academics and accepted by courts. See, for example, Freedman, David A., and David H. Kaye, “Reference Guide on Statistics,” *Reference Manual on Scientific Evidence* (Washington, D.C.: The National Academies Press, 3rd ed., 2011), pp. 211-302, and Fisher, Franklin M., “Multiple Regression in Legal Proceedings,” 80 *Columbia Law Review* 702 (1980).)

**Average Number of News Stories by Number of Shots Fired
In Factiva Stories on Incidents of Self-Defense with a Firearm
January 2011 - May 2017**

Number of Shots Fired By Defender	Average Number of News Stories
0	1.8
1 to 2	2.8
3 to 5	3.8
6 or more	10.4

Notes and Sources:

Based on stories describing defensive gun use in a random selection of Factiva stories between 2011 to May 2017 using the search string: (gun* or shot* or shoot* or fire* or arm*) and ("broke in" or "break in" or "broken into" or "breaking into" or burglar* or intrud* or inva*) and (home* or "apartment" or "property"), with region set to "United States" and excluding duplicate stories classified as "similar" on Factiva. Methodology for tabulation of shots fired as per footnote 20.

18. After adjusting for this disparity in news coverage, we find that the average number of shots fired per incident covered is 2.34.²² Note that this adjustment does not take into account the fact that some defensive gun use incidents may not be picked up by *any* news story. Given the observed relationship that there are more news stories when there are more shots fired, one would expect that the incidents that are not written about would on average have fewer shots than those with news stories. Therefore, the expectation is that these results, even after the

²² The adjustment reflects the probability that a news story on a particular incident would be selected at random from the total population of news stories on incidents of self-defense with a firearm in the home. The formula used for the adjustment is:

$$\frac{\sum_{i=1}^n \left(\text{Shots Fired}_i \times \frac{R_i}{C_i} \right)}{\sum_{i=1}^n \left(\frac{R_i}{C_i} \right)}$$

where:

n = random selection of news stories on incidents of self-defense with a firearm in the home

R_i = number of search results on Factiva in the calendar year of incident i

C_i = number of news stories covering incident i

adjustment, are biased upward (*i.e.*, estimating too high an average number of shots and underestimating the percent of incidents in which no shots were fired).

19. As shown in the table below, according to the study of Factiva news stories, in 11.6% of incidents the defender did not fire any shots, and simply threatened the offender with a gun. In 97.3% of incidents the defender fired 5 or fewer shots. There were no incidents where the defender was reported to have fired more than 10 bullets.

**Number of Shots Fired in Self-Defense in the Home
Based on Random Selection of Articles from Factiva
January 2011 - May 2017**

	Incidents in the Home
Estimated population of news reports in Factiva on self-defense with a firearm in the home	4,841
Random selection of news reports	200
Average Number of Shots Fired	2.34
Median Number of Shots Fired	2.03
Number of Incidents with No Shots Fired	23
Percent of Incidents with No Shots Fired	11.6%
Number of Incidents with <=5 Shots Fired	195
Percent of Incidents with <=5 Shots Fired	97.3%
Number of Incidents with >10 Shots Fired	0
Percent of Incidents with >10 Shots Fired	0.0%

Notes and Sources:

Based on news stories describing defensive gun use in a random selection of Factiva stories 2011 to May 2017 using search string (gun* or shot* or shoot* or fire* or arm*) and ("broke in" or "break in" or "broken into" or "breaking into" or burglar* or intrud* or inva*) and (home* or "apartment" or "property") with region set to United States and excluding duplicate stories classified as "similar."

Calculated using weights reflecting the probability that a news story on a particular incident would be selected at random from the total population of news stories on incidents of self-defense with a firearm in the home.

20. In sum, an analysis of incidents in the NRA Armed Citizen database, as well as our own study of a random sample from approximately 4,800 news stories describing incidents of self-defense with a firearm, indicates that it is extremely rare for a person, when using a firearm in self-defense, to fire more than ten rounds.

IV. PUBLIC MASS SHOOTINGS

21. We analyzed the use of Large-Capacity Magazines in public mass shootings using four sources for identifying public mass shootings: Mother Jones,²³ the Citizens Crime Commission of New York City,²⁴ the Washington Post²⁵ and the Violence Project.^{26, 27} The analysis focused on public mass shootings because it is my understanding that the state of Oregon is concerned about public mass shootings and enacted the challenged law, in part, to address the problem of public mass shootings.²⁸

²³ “US Mass Shootings, 1982-2022: Data From Mother Jones’ Investigation,” Mother Jones, updated November 23, 2022, <http://www.motherjones.com/politics/2012/12/mass-shootings-mother-jones-full-data>.

²⁴ “Mayhem Multiplied: Mass Shooters and Assault Weapons,” Citizens Crime Commission of New York City, February 2018 update. Additional details on the mass shootings were obtained from an earlier source by the Citizens Crime Commission. “Mass Shooting Incidents in America (1984-2012),” Citizens Crime Commission of New York City, <http://www.nycrimecommission.org/mass-shooting-incidents-america.php>, accessed June 1, 2017.

²⁵ “The terrible numbers that grow with each mass shooting,” The Washington Post, updated May 12, 2021.

²⁶ “Mass Shooter Database,” The Violence Project, <https://www.theviolenceproject.org/mass-shooter-database/>, updated May 14, 2022.

²⁷ When I began research in 2013 on mass shootings, I found Mother Jones and Citizens Crime Commission to maintain the most comprehensive lists of relevant mass shootings. More recently, two additional sources, the Washington Post and The Violence Project, have compiled lists of public mass shootings. The Violence Project began work on its mass shootings database in September 2017 and its database first went online in November 2019, while the Washington Post first published its mass shootings database in February 2018. There is substantial overlap between the mass shootings in all four sources. For example, the Mother Jones data contains 93% of the mass shootings in the Citizens Crime Commission data for the years covered by both data sources, 1984 to 2016, while the Washington Post contains 94% of the mass shootings in The Violence Project data for the years covered by both data sources, 1966 to 2019.

²⁸ See, for example, the Preamble to Oregon’s Measure 114.

22. The type of incident considered a mass shooting is generally consistent across the four sources. In particular, all four sources consider an event a mass shooting if four or more people were killed in a public place in one incident and exclude incidents involving other criminal activity such as a robbery.²⁹

²⁹ Citizen Crime Commission describes a mass shooting as “four or more victims killed” in “a public place” that were “unrelated to another crime (e.g., robbery, domestic violence).” Citizen Crime notes that its sources include “news reports and lists created by government entities and advocacy groups.” “Mayhem Multiplied: Mass Shooters and Assault Weapons,” Citizens Crime Commission of New York City, February 2018 update.

Mother Jones describes a mass shooting as “indiscriminate rampages in public places resulting in four or more victims killed by the attacker,” excluding “shootings stemming from more conventionally motivated crimes such as armed robbery or gang violence.” Although in January 2013 Mother Jones changed its definition of mass shooting to include instances when three or more people were killed, for this declaration we only analyzed mass shootings where four or more were killed to be consistent with the definition of the other three sources. “A Guide to Mass Shootings in America,” Mother Jones, updated November 23, 2022, <http://www.motherjones.com/politics/2012/07/mass-shootings-map>. See also, “What Exactly is a Mass Shooting,” Mother Jones, August 24, 2012. <http://www.motherjones.com/mojo/2012/08/what-is-a-mass-shooting>.

The Washington Post describes a mass shooting as “four or more people were killed, usually by a lone shooter” excluding “shootings tied to robberies that went awry” and “domestic shootings that took place exclusively in private homes.” The Washington Post notes that its sources include “Grant Duwe, author of ‘Mass Murder in the United States: A History,’ Mother Jones and Washington Post research,” as well as “Violence Policy Center, Gun Violence Archive; FBI 2014 Study of Active Shooter Incidents; published reports.” “The terrible numbers that grow with each mass shooting,” The Washington Post, updated May 12, 2021, <https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/>.

The Violence Project indicates that it uses the Congressional Research Service definition of a mass shooting: “a multiple homicide incident in which four or more victims are murdered with firearms—not including the offender(s)—within one event, and at least some of the murders occurred in a public location or locations in close geographical proximity (e.g., a workplace, school, restaurant, or other public settings), and the murders are not attributable to any other underlying criminal activity or commonplace circumstance (armed robbery, criminal competition, insurance fraud, argument, or romantic triangle).” The Violence Project notes that its sources include “Primary Sources: Written journals / manifestos / suicide notes etc., Social media and blog posts, Audio and video recordings, Interview transcripts, Personal correspondence with perpetrators” as well as “Secondary Sources (all publicly available): Media (television, newspapers, magazines), Documentary films, Biographies, Monographs, Peer-reviewed journal articles, Court transcripts, Law Enforcement records, Medical records, School records, Autopsy reports.” “Mass Shooter Database,” The Violence Project, <https://www.theviolenceproject.org/methodology/>, accessed January 17, 2020.

23. Each of the four sources contains data on mass shootings covering different time periods. The Mother Jones data covers 112 mass shootings from 1982 to October 13, 2022,³⁰ the Citizens Crime Commission data covers 80 mass shootings from 1984 to February 2018,³¹ the Washington Post data covers 185 mass shootings from 1966 to May 12, 2021,³² and The Violence Project data covers 182 mass shootings from 1966 to May 14, 2022.^{33, 34}

24. Note that the two more recently compiled sources of mass shootings, the Washington Post and The Violence Project, include additional mass shootings that were not covered by either Mother Jones or Citizens Crime Commission. In general, we found that these additional mass shootings were less covered by the media and involved fewer fatalities and/or injuries than the ones previously identified by Mother Jones or Citizens Crime Commission. For example, using the mass shooting data for the period 1982 through 2019, we found that the

³⁰ “A Guide to Mass Shootings in America,” Mother Jones, updated November 23, 2022, <http://www.motherjones.com/politics/2012/07/mass-shootings-map>. Excludes mass shootings where only three people were killed. Note this analysis of the Mother Jones data may not match other analyses because Mother Jones periodically updates its historical data.

³¹ “Mayhem Multiplied: Mass Shooters and Assault Weapons,” *Citizens Crime Commission of New York City*, February 2018 update.

³² “The terrible numbers that grow with each mass shooting,” *The Washington Post*, updated May 12, 2021, <https://www.washingtonpost.com/graphics/2018/national/mass-shootings-in-america/>.

³³ “Mass Shooter Database,” *The Violence Project* <https://www.theviolenceproject.org/mass-shooter-database/>, updated May 14, 2022.

³⁴ Note that I have updated this mass shooting analysis to include more recent incidents, as well as more recently available details. In my 2017 declaration in *Virginia Duncan et al. v. California Attorney General*, I included data on mass shootings through April 2017. In my 2018 declaration in *Rupp v. California Attorney General*, I updated the analysis to include data on mass shootings through September 2018. The analyses in both of these declarations included mass shootings only from Mother Jones and the Citizen Crime Commission. In my 2020 declaration in *James Miller et al. v. California Attorney General*, I updated the analysis to include mass shootings through December 2019 and added mass shootings from two more sources, the Washington Post and the Violence Project. The number of mass shootings, as well as some details about the shootings, are not identical across these declarations for three main reasons. First, I have updated the analysis to include more recent incidents as well as more recently available details. Second, starting in 2020, I added two more sources (Washington Post and Violence Project), which include additional mass shootings and details not included in the initial sources. Third, even though Mother Jones included instances when three or more people were killed, for my declarations and reports starting in 2020, I only included mass shootings where four or more were killed to be consistent with the definition of the other three sources.

median number of news stories for a mass shooting included in Mother Jones and/or Citizen Crime Commission was 317, while the median for the additional mass shootings identified in the Washington Post and/or The Violence Project was 28.³⁵ In addition, using the mass shooting data through 2019, we found an average of 21 fatalities or injuries for a mass shooting included in Mother Jones and/or Citizen Crime Commission, while only 6 fatalities or injuries for the additional mass shootings identified in the Washington Post and/or The Violence Project.

25. We combined the data from the four sources for the period 1982 through October 2022, and searched news stories on each mass shooting to obtain additional details on the types of weapons used as well as data on shots fired where available. We identified, based on this publicly available information, which mass shootings involved the use of Large-Capacity Magazines. See attached Exhibit B for a summary of the combined data, on mass shootings based on Mother Jones, Citizens Crime Commission, the Washington Post, the Violence Project, and news reports.³⁶

A. Use of Large-Capacity Magazines in public mass shootings

26. Based on the 179 mass shootings through October 2022, we found that Large-Capacity Magazines (those with a capacity to hold more than 10 rounds of ammunition) are often used in public mass shootings. Magazine capacity is known in 115 out of the 179 mass shootings (or 64%) considered in this analysis. Out of the 115 mass shootings with known magazine capacity, 73 (or 63%) involved Large-Capacity Magazines. Even assuming the mass shootings

³⁵ The search was conducted over all published news stories on Factiva. The search was based on the shooter's name and the location of the incident over the period from one week prior to three months following each mass shooting.

³⁶ Note that the information in Exhibit B in this Declaration is identical to Exhibit B in the Supplemental Declaration of Lucy P. Allen, dated November 10, 2022 in the *Virginia Duncan et al. v. California Attorney General* case (with the exception of an update on the number of shots fired in incident #4, see footnote bd in Exhibit B). The Citizens Crime Commission last updated their data in February 2018 and the Washington Post last updated their data in May 2021.

with unknown magazine capacity *all* did not involve Large-Capacity Magazines, 73 out of 179 mass shootings or 41% of mass shootings involved Large-Capacity Magazines.

27. Based on our analysis, casualties were higher in the mass shootings that involved weapons with Large-Capacity Magazines than in other mass shootings. In particular, we found an average number of fatalities or injuries of 25 per mass shooting with a Large-Capacity Magazines versus 9 for those without. Focusing on just fatalities, we found an average number of fatalities of 10 per mass shooting with a Large-Capacity Magazines versus 6 for those without. (See table below.)

Numbers of Fatalities and Injuries in Public Mass Shootings 1982 - October 2022				
Weapon Used	# of Incidents	Average # of		
		Fatalities	Injuries	Total
Large-Cap. Mag.	73	10	16	25
No Large-Cap. Mag.	42	6	3	9
Unknown	64	5	3	7
Notes and Sources: Casualty figures exclude the shooter. Large-capacity magazine classification and casualties updated based on review of stories from Factiva/Google searches.				

28. Our results are consistent with those of other studies that have analyzed mass shootings. Note that although the other studies are based on alternate sets of mass shootings, including covering different years and defining mass shootings somewhat differently, the results are similar in finding that fatalities and injuries are larger in mass shootings in which large capacity magazines are involved. A 2019 academic article published in the *American Journal of Public Health* by Klarevas et al. found that “[a]ttacks involving LCMs resulted in a 62% higher

mean average death toll.”³⁷ This study found an average number of fatalities of 11.8 per mass shooting with a large-capacity magazine versus 7.3 for those without. The results in this study were based on 69 mass shootings between 1990 and 2017.³⁸ An analysis of the mass shootings detailed in a 2016 article by Gary Kleck yielded similar results (21 average fatalities or injuries in mass shootings involving large-capacity magazines versus 8 for those without).³⁹ The Kleck study covered 88 mass shooting incidents between 1994 and 2013.⁴⁰ In a 2018 study, Koper et al. found that mass shootings involving assault weapons and large-capacity magazines resulted in an average of 13.7 victims versus 5.2 for other cases.⁴¹ The Koper et al. study covered 145 mass shootings between 2009 and 2015.⁴² The table below summarizes their results.

³⁷ Louis Klarevas, Andrew Conner, and David Hemenway, “The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings, 1990–2017,” *American Journal of Public Health* (2019).

³⁸ The Klarevas et al. study defines mass shootings as “intentional crimes of gun violence with 6 or more victims shot to death, not including the perpetrators” and, unlike my analysis, does not exclude incidents in private places or incidents involving other criminal activity such as robbery.

³⁹ Kleck, Gary, “Large-Capacity Magazines and the Casualty Counts in Mass Shootings: The Plausibility of Linkages,” 17 *Justice Research and Policy* 28 (2016).

⁴⁰ The Kleck study defines a mass shooting as “one in which more than six people were shot, either fatally or nonfatally, in a single incident.” See, Kleck, Gary, “Large-Capacity Magazines and the Casualty Counts in Mass Shootings: The Plausibility of Linkages,” 17 *Justice Research and Policy* 28 (2016).

⁴¹ Koper et al., “Criminal Use of Assault Weapons and High-Capacity Semiautomatic Firearms: an Updated Examination of Local and National Sources,” *Journal of Urban Health* (2018).

⁴² The Koper et al. study defined mass shooting as “incidents in which four or more people were murdered with a firearm, not including the death of the shooter if applicable and irrespective of the number of additional victims shot but not killed.”

Comparison of Studies on the Use of Large-Capacity Magazines in Mass Shootings						
Source	Criteria		Time Period	# of Incidents	Avg. # of Fatalities + Injuries / Fatalities	
	# Victims	Other Criteria			With LCM	Without LCM
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Allen (2023) ¹	at least 4	Includes shootings "in a public place in one incident, and exclude[s] incidents involving other criminal activity such as a robbery"	1982-October 2022	179	25 / 10	9 / 6
Allen (2020) ²	<u>killed</u> ³		1982-2019	161	27 / 10	9 / 6
Kleck et al. (2016) ⁴	at least 6 <u>shot</u>	Excludes "spree shootings" and includes shootings in both "public" and "private" places	1994-2013	88	21 / n/a	8 / n/a
Klarevas et al. (2019) ⁵	at least 6 <u>killed</u> ³	Includes "intentional crimes of gun violence"	1990-2017	69	n/a / 12	n/a / 7
Koper et al. (2018) ⁶	at least 4 <u>killed</u> ³	Includes shootings in both public and private places	2009-2015	145	14 / n/a	5 / n/a
Notes and Sources:						
¹ Exhibit B of this Declaration.						
² Declaration of Lucy P. Allen in Support of Defendants' Opposition to Motion for Preliminary Injunction in <i>James Miller et al. v. Xavier Becerra et al.</i> , dated January 23, 2020.						
³ Excluding shooter.						
⁴ Kleck, Gary, "Large-Capacity Magazines and the Casualty Counts in Mass Shootings: The Plausibility of Linkages," 17 Justice Research and Policy 28 (2016).						
⁵ Klarevas et al., "The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings 1990-2017," American Journal of Public Health (2019).						
⁶ Koper et al., "Criminal Use of Assault Weapons and High-Capacity Semiautomatic Firearms: an Updated Examination of Local and National Sources," Journal of Urban Health (2018). Note that the Koper et al study includes shootings involving both LCM and assault weapons.						

B. Number of rounds fired in public mass shootings with Large-Capacity Magazines

29. The data on public mass shootings indicates that it is common for offenders to fire more than ten rounds when using a gun with a Large-Capacity Magazine. Of the 73 mass shootings that are known to have involved a Large-Capacity Magazine, there are 49 in which the number of shots fired is known. Shooters fired more than ten rounds in 46 of the 49 incidents (or 94%), and the average number of shots fired was 99.

1. Percent of mass shooters' guns legally obtained

30. The data on public mass shootings indicates that the majority of guns used in these mass shootings were obtained legally.⁴³ Of the 179 mass shootings analyzed through October 2022, there are 112 where it can be determined whether the gun was obtained legally. According to the data, shooters in 79% of mass shootings obtained their guns legally (89 of the 112 mass shootings) and 80% of the guns used in these 112 mass shootings were obtained legally (202 of the 252 guns). (Note that even if one assumes that *all* of the mass shootings where it is not known were assumed to be illegally obtained, then one would find 50% of the mass shootings and 62% of the guns were obtained legally.)

C. Number of guns involved in mass shootings

31. The data on public mass shootings indicates that the majority of mass shootings involved a shooter with only one gun. Of the 179 mass shootings analyzed through October 2022, there are 165 where the number of guns involved can be determined. According to the data, the shooter had only one gun in 53% of the mass shootings, two guns in 26%, 3 guns in 12% and 4 or more guns in 10%. The table below summarizes these results.

⁴³ The determination of whether guns were obtained legally is based on Mother Jones and Washington Post reporting.

Number of Guns Involved per Mass Shooting		
Number of Guns Involved	Number of Mass Shootings	%
1	87	53%
2	43	26%
3	19	12%
4 or more	16	10%
	165	
Sources:		
See Exhibit B for details on sources.		

V. RESPONSES TO THE KLECK DECLARATION

32. The Kleck Declaration comments on the Supplemental Declaration of Lucy P. Allen, dated November 10, 2022 in the *Virginia Duncan et al. v. California Attorney General* case (“Allen 2022 Declaration”).⁴⁴ Below are responses to comments and criticisms raised in the Kleck Declaration that relate to material discussed in this Declaration.

A. The Kleck Declaration is incorrect that the list of mass shootings in this Declaration and the Allen 2022 Declaration is “miscellaneous,” “arbitrary” and “radically incomplete”

33. Dr. Kleck claims that the list of mass shootings in the Allen 2022 Declaration, which is essentially the same list I use in this Declaration, is “miscellaneous,” “arbitrary” and “radically incomplete.”⁴⁵ Dr. Kleck is incorrect – the list of mass shootings in my Declarations is based on the specific and commonly used definition of a mass shooting that is outlined in my Declarations and Dr. Kleck fails to identify any incidents within that definition that are missing.

⁴⁴ Kleck Declaration, ¶¶10-37.

⁴⁵ Kleck Declaration, ¶¶11-14 and Deposition of Gary D. Kleck, taken on January 25, 2023 (“Deposition of Gary Kleck”), 20:22-21:2.

34. Contrary to Dr. Kleck's claims, there is nothing "miscellaneous" or "arbitrary" about my list of mass shootings. My list of mass shootings was compiled using the specific definition of a mass shooting as outlined in this Declaration, as well as the Allen 2022 Declaration: an incident in which four or more people are killed in a public place, excluding incidents involving other criminal activity such as a robbery. Different researchers and aggregators have defined mass shootings differently, but the definition outlined in my analysis is the definition employed by four different frequently cited sources: the Washington Post, the Citizens Crime Commission, the Violence Project, and Mother Jones.

35. The Kleck Declaration complains that I use "four largely overlapping sources of data."⁴⁶ However, instead of being a criticism, Dr. Kleck's observation supports the idea that my definition is a standard and commonly used definition for mass shootings. The fact that the four lists are largely overlapping is evidence that the definition I have used is consistent and common with that used by a number of other sources.

36. The Kleck Declaration's claim that my list is "radically incomplete" is unsupported. Dr. Kleck fails to identify, in either his declaration or deposition testimony, any mass shooting consistent with my definition that is missing from my list.⁴⁷

37. Moreover, the very source that Dr. Kleck claims proves my list is incomplete in fact shows the opposite. Dr. Kleck claims that I mistakenly rely on "four radically incomplete compilations" of mass shootings while ignoring the compilation of mass shootings from the Gun Violence Archive ("GVA").⁴⁸ Dr. Kleck claims that his counts of incidents from the GVA show that my list of mass shootings is "radically incomplete." Specifically, the Kleck Declaration provides counts of mass shootings that included "4+ dead in a single incident" from GVA.⁴⁹

⁴⁶ Kleck Declaration, ¶11.

⁴⁷ Kleck Declaration, ¶¶11-16 and Deposition of Gary Kleck, 18:7-18.

⁴⁸ Kleck Declaration, ¶12.

⁴⁹ Kleck Declaration, ¶14. Note that we cannot replicate Dr. Kleck's exact counts. Dr. Kleck does not provide the list of mass shootings included in his counts and he testified that he did not download the data

However, if we repeat Dr. Kleck's system of obtaining mass shootings from GVA and exclude those that do not meet my definition, *e.g.*, those occurring in the home (approximately two thirds) and those related to other criminal activity (approximately 5%),⁵⁰ we get essentially the same number of mass shootings as in my analysis for those years. In fact, using GVA for the years Dr. Kleck analyzed (2014 -2021),⁵¹ I not only get essentially the same number of mass shootings, I get essentially all the same incidents that are in my analysis. Thus, Dr. Kleck's own compilation of mass shootings, rather than contradicting my analysis, actually validates it.

38. The Kleck Declaration claims that mass shootings are "commonly defined" as "4+ dead in a single incident," and implies that the definition in my analysis, which excludes incidents in the home or related to other crimes, is not common.⁵² However, he provides no support for this claim, and the very sources he relies upon define mass shootings differently than Dr. Kleck's asserted "common" definition. The Kleck Declaration relies on two sources of incidents for his analysis of mass shootings: GVA and the Violence Policy Center ("VPC"). Both of these sources define a mass shooting differently than what Dr. Kleck claims is the common definition. GVA uses the definition "four or more people are *shot or killed* in a single incident, not including the shooter" and VPC uses "*three* or more fatalities."⁵³ Moreover, the allegedly common definition that Dr. Kleck applies in his current Kleck Declaration is inconsistent with

or any of the details but kept only his "tabulation" of the counts. In addition, Dr. Kleck testified that he "didn't realize in the early years" that GVA sometimes includes the shooter in its count of fatalities. Thus, it appears Dr. Kleck sometimes includes incidents in his counts where only 3 victims were killed. See, Deposition of Gary Kleck, 31:18-37:12.

⁵⁰ The approximate 5% includes incidents with insufficient detail to determine locale.

⁵¹ Excludes the year 2013 since data for that year is not on GVA's website.

⁵² Kleck Declaration, ¶¶10-11, 14.

⁵³ "General Methodology," *Gun Violence Archive Website*, accessed on February 3, 2023 and "Mass Shootings in the United States Involving Large Capacity Ammunition Magazines," *Violence Policy Center*, September 16, 2022.

his own definition of a mass shooting. In his own academic work, Dr. Kleck has defined a mass shooting as “more than *six* people were *shot, either fatally or nonfatally*, in a single incident.”⁵⁴

B. Dr. Kleck, while criticizing the list of mass shootings in my analysis, agrees with my finding that both injuries and deaths are larger in mass shootings in which LCMs are involved

39. Although the Kleck Declaration criticizes the list of mass shootings that I use in my analysis for being “miscellaneous,” Dr. Kleck agrees with the conclusions of my analysis. In particular, he agrees with my finding that the number of both casualties and deaths are larger in mass shootings in which large capacity magazines or “LCMs” are involved. In particular, the Kleck Declaration states “Allen correctly notes that mass shooters who used LCMs inflicted more casualties than those who did not[.]”⁵⁵

40. Moreover, Dr. Kleck’s own study of mass shootings (which was based on his own definition of a mass shooting of more than 6 people shot in a single incident) found that casualties are larger in mass shootings in which LCMs are involved. In particular, in his 2016 article, Dr. Kleck found that there were on average 21 fatalities or injuries in mass shootings involving LCMs versus 8 for those without.⁵⁶

41. Thus, based on either definition of a mass shooting, there is a consistent finding that there are on average more deaths and injuries if a mass shooting involves an LCM.⁵⁷

⁵⁴ See, for example, Kleck, Gary, “Large-Capacity Magazines and the Casualty Counts in Mass Shootings: The Plausibility of Linkages,” 17 *Justice Research and Policy* 28 (2016), emphasis added.

⁵⁵ Kleck Declaration, ¶17.

⁵⁶ Kleck, Gary, “Large-Capacity Magazines and the Casualty Counts in Mass Shootings: The Plausibility of Linkages,” 17 *Justice Research and Policy* 28 (2016).

⁵⁷ In addition to the results in this Declaration (as well as the Allen 2020 Declaration and prior analyses I have done) and Dr. Kleck’s 2016 article, the finding that there are on average more deaths and injuries in mass shootings involving LCMs is also in Klarevas et al., “The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings 1990-2017,” *American Journal of Public Health* (2019), and Koper et al., “Criminal Use of Assault Weapons and High-Capacity Semiautomatic Firearms: an Updated Examination of Local and National Sources,” *Journal of Urban Health* (2018).

C. Dr. Kleck's estimate that only 11.7% of mass shootings involve LCMs is based primarily on incidents in the home and/or ones with unknown magazine type; restricting his analysis to public mass shootings validates the findings in my Declarations

42. In the Allen 2022 Declaration and in this Declaration, I find that 63% of mass shootings with known magazine capacity involved LCMs and, assuming that *none* of the mass shootings with unknown magazine involved LCMs, 41% of mass shootings involved LCMs. Dr. Kleck claims that my estimate of the percent of mass shootings involving LCMs is too high and that only 11.7% of mass shootings involve LCMs.⁵⁸

43. Dr. Kleck's 11.7% estimate is based on taking a simple ratio of incidents in VPC, a source that maintains a report listing mass shootings for which it is known that an LCM was involved ("Mass Shootings in the United States Involving Large Capacity Ammunition Magazines"), to incidents in GVA, a source that includes mass shootings regardless of the magazine capacity. Dr. Kleck first isolates the incidents in each source for which at least 4 people were killed, finding 26 in VPC and 222 in GVA for the years 2013 to 2021.⁵⁹ Dr. Kleck divides the 26 incidents with LCMs in VPC by the 222 incidents in GVA and concludes that only 11.7% of mass shootings involve LCMs.⁶⁰

44. Dr. Kleck's analysis yields very different results from mine for primarily two related reasons. First, his analysis erroneously assumes that all incidents with an LCM have been identified and included in the VPC list. Second, the majority of incidents in his analysis occurred in the home, while the focus of my analysis is on public mass shootings.

⁵⁸ Kleck Declaration, ¶15.

⁵⁹ Kleck Declaration, ¶14.

⁶⁰ Kleck Declaration, ¶¶14-15.

1. The Kleck Declaration's claim that it is "unlikely" that VPC "missed" mass shootings that involved LCMs is unsupported and directly contradicted by the VPC's own report

45. The Kleck Declaration claims that it is "highly unlikely" for "an LCM-involved mass shooting to be missed in the VPC search."⁶¹ However, Dr. Kleck provides no support for his claim and the VPC's own report on mass shootings directly contradicts it.

46. The Kleck Declaration relies on a report published by the VPC which includes a list of mass shootings that involved LCMs.⁶² The first page of the VPC's report explains that its list of mass shootings involving LCMs "*is likely a significant undercount* of actual incidents as there is no consistent collection or reporting on this data" and "[e]ven in many high-profile shootings, information on magazine capacity is neither released nor reported."⁶³ Thus, Dr. Kleck's assumption that there are no mass shootings where the magazine capacity is unknown is directly contradicted by the very source he relies upon for this information, which indicates that the magazine capacity is unknown in a "significant" number of mass shootings.

Dr. Kleck testified that prior to making his counts and calculations, he did not check whether mass shootings in the GVA list that were not in the VPC list actually involved LCMs, or whether there was always sufficient information to determine magazine capacity.⁶⁴ Moreover, in his deposition, Dr. Kleck admitted that there are a number of incidents involving LCMs that are not included in the VPC list.⁶⁵ For example, in his deposition he admitted the mass shooting in Rancho Tehama, California on November 14, 2017 (#39 in my Exhibit B and incident #987611 in the GVA database) is not included in the VPC list but according to news reports did involve

⁶¹ Kleck Declaration, ¶13.

⁶² "Mass Shootings in the United States Involving Large Capacity Ammunition Magazines," The Violence Policy Center, https://vpc.org/fact_sht/VPCshootinglist.pdf, accessed February 1, 2023, and Kleck Declaration, ¶¶ 13-15.

⁶³ "Mass Shootings in the United States Involving Large Capacity Ammunition Magazines," The Violence Policy Center, https://vpc.org/fact_sht/VPCshootinglist.pdf, accessed February 1, 2023, emphasis added.

⁶⁴ Deposition of Gary Kleck, 44:7-11.

⁶⁵ Deposition of Gary Kleck, 46:13-49:12.

an LCM.⁶⁶ There are other mass shootings involving LCMs that are not included in the VPC list. For example, the mass shooting in Indianapolis, Indiana on April 15, 2021 (#10 in my Exhibit B and incident #1978635 in the GVA database) is also not included in the VPC list but did involve an LCM.⁶⁷ Similarly, the mass shooting in Melrose Park, Illinois on February 5, 2001 (#118 in my Exhibit B) is another example of an incident involving an LCM but excluded from the VPC list.⁶⁸

47. Thus, not only has VPC not identified every mass shooting where public information indicates that there was an LCM involved but critically, as VPC itself explains, there is often not enough information to determine the magazine capacity and there are likely many mass shootings with LCMs omitted from the VPC list. As detailed in my Exhibit B, after a search of public information and news stories, we found that magazine capacity was unknown for 36% of mass shootings (64 of the 179 mass shootings).

2. The Kleck Declaration's calculation of LCM use is heavily affected (and reduced) by its inclusion of incidents in the home

48. Dr. Kleck claims that my estimate of the percent of mass shootings involving LCMs is too high and that only 11.7% of mass shootings involved an LCM.⁶⁹ However, his data do not demonstrate that my estimate is too high – the primary reason why Dr. Kleck's calculation yields a lower proportion is that it includes incidents that occurred in the home, whereas the focus of my analysis is on public mass shootings.

⁶⁶ "Terror in Northern California town as gunman goes on rampage, kills 5," *Los Angeles Times*, November 14, 2017, which states that "staffers described the scene as 'horrific,' with multiple rounds fired and multiple high-capacity magazines found at the school."

⁶⁷ "Prosecutor: FedEx shooter didn't have 'red flag' hearing," *WishTV*, April 19, 2021, and "HM DEFENSE HM15F-MB-556 DEFENDER M5 223 REM, 5.56X45MM NATO 16" 30+1 BLACK HARD COAT ANODIZED BLACK MIL-SPEC HM STOCK," *Carter's Country*, <https://www.carterscountry.com/product/hm-defense-defender-m5-223-rem5.56-nato-16-301-black-hard-coat-anodized-mil-spec-hm-stock>, accessed February 3, 2023.

⁶⁸ "Ex-Employee Kills 4, Self in Rampage," *ABC News*, February 6, 2001, and "Kalashnikov AK-47," *WeaponSystems.net*, <https://weaponsystems.net/system/605-Kalashnikov%20AK-47>, accessed February 5, 2023.

⁶⁹ Kleck Declaration, ¶15.

49. Contrary to Dr. Kleck's claim that he has shown that my estimate of the percent of mass shootings involving LCMs is too high, an analysis of Dr. Kleck's set of mass shootings validates the findings in this Declaration and the Allen 2022 Declaration. As discussed above, I find that 63% of mass shootings with known magazine capacity involved LCMs and, assuming that *none* of the mass shootings with unknown magazine involved LCMs, 41% of mass shootings involved LCMs.

50. Using Dr. Kleck's method of taking the ratio of VPC to GVA incidents but limiting Dr. Kleck's incidents to only public mass shootings for the years 2014-2021⁷⁰ results in an estimate that approximately 40% of public mass shootings involved known LCMs and is therefore entirely consistent with and validates the findings in my Declarations.

51. Instead, focusing on mass shootings in the home, which account for almost two thirds of Dr. Kleck's mass shootings from GVA, yields very different results.⁷¹ In particular, limiting Dr. Kleck's method to only mass shootings in the home results in a finding that less than 2% of mass shootings in GVA are listed in VPC and thus, according to Dr. Kleck, less than 2% involved LCMs. Thus, compared to public mass shootings, the evidence indicates that mass shootings in the home are less likely to involve known LCMs, suggesting that LCMs are less frequently used in mass shootings in the home and/or there is less information about magazine capacity for mass shootings in the home.

52. I performed an analysis comparing the news coverage for public mass shootings versus mass shootings in the home. The results suggest that there is less information about mass shootings in the home and thus it would presumably be more likely that magazine capacity is unknown for these incidents. I found that the public mass shootings are covered by news stories substantially more (4 to 36 times more) than mass shootings in the home. In particular, we

⁷⁰ Data for 2013 was not available on GVA's website.

⁷¹ Approximately 5% of Dr. Kleck's mass shootings related to other criminal activity and/or had insufficient detail on shooting locale.

performed a news search using Factiva for the 3-day and 10-day periods after each incident in the GVA set of mass shootings using Dr. Kleck's method for the years 2017, 2019 and 2021.⁷² In the 3-day period after an incident, the mean and median number of news stories for public mass shootings was 193 and 21, while for mass shootings in the home it was 6 and 5. In the 10-day period after an incident, the mean and median number of news stories for public mass shootings was 296 and 25, while for mass shootings in the home it was 8 and 6. The table below summarizes these results. As can be seen in the table below, the number of news stories is far greater for public mass shooting than incidents in the home, suggesting that magazine capacity would be more unknown for incidents in the home than the 36% percent of unknowns I find for public mass shootings.

Number of News Stories Covering Mass Shootings

	3-Day Window		10-Day Window	
	Mean	Median	Mean	Median
Public Mass Shootings	193	21	296	25
Mass Shootings in the Home	6	5	8	6

Notes and Sources:

Data from Factiva and the Gun Violence Archive. The search covers the years 2017, 2019, and 2021 and uses the search string (gun* or shoot* or fire* or arm* or shot*) AND (kill* or "dead" or "death") AND ("[City]") AND ("[Street]") NOT (covid* or "coronavirus" or "virus"). The region was set to the United States and the state in which the shooting took place, and the search excludes duplicate stories classified as "similar" as well as "republished news," and "recurring pricing and market data."

⁷² The specific search string used in Factiva was: (gun* or shoot* or fire* or arm* or shot*) AND (kill* or "dead" or "death") AND ("[City]") AND ("[Street]") NOT (covid* or "coronavirus" or "virus"). The region was set to United States and the state in which the shooting took place, and the search excludes duplicate stories classified as "similar" as well as "republished news," "recurring pricing and market data," and "obituaries, sports, calendars..." The "City" and "Street" for each incident were obtained from GVA.

53. Thus, using Dr. Kleck's two sources, GVA and VPC, I find evidence that unknown magazine capacity can be a substantial issue, particularly for mass shootings in the home, and that even assuming all mass shootings where the magazine capacity is unknown are not LCMs, approximately 40% of public mass shootings involve LCMs.

D. Dr. Kleck's claim that my analysis of DGUs is not reliable ignores my systematic and scientific analysis of DGUs from Factiva news stories that yields similar results to my analysis of the NRA database

54. Dr. Kleck claims that my analysis of defensive gun uses ("DGUs") from the NRA Armed Citizen database is not reliable evidence because it is not based on a representative sample. However, Dr. Kleck's criticisms of my NRA Armed Citizen database analysis do not apply to my Factiva analysis, which is based on a systematic, scientific study of news reports on incidents of self-defense with a firearm, and which yields similar results, *i.e.*, it is extremely rare for a person, when using a firearm in self-defense, to fire more than ten rounds.

55. Moreover, Dr. Kleck has no support for his argument that the NRA has the incentive to exclude DGU incidents in which the defender fired more than ten shots. The NRA would presumably better serve its political ends by showing that individuals regularly require more than ten rounds to defend themselves.

E. Dr. Kleck's claim that there are 2.2 million DGUs a year is based on his own survey and study that have been heavily criticized in the past and overstate the numbers

56. The Kleck Declaration claims that "numerous national surveys" have "consistently indicated 0.5-3.5 million DGUs per year, averaging about 2.2 million DGUs a year."⁷³ However, this estimate is unreliable for a number of reasons, including that the surveys Dr. Kleck references do not actually estimate the number of DGUs per year in the United States,

⁷³ Kleck Declaration, ¶33, citing his own paper Gary Kleck, "What Do CDC's Surveys Say About the Prevalence of Defensive Gun Use?," *American Journal of Criminal Justice*, 2020.

have been criticized by Dr. Kleck himself, and do not account for the reduction in crime from the time when the surveys were conducted to the present.

57. Many of the surveys referenced by Dr. Kleck do not *actually* estimate the number of annual DGUs. Instead, Dr. Kleck applies 12 different adjustments, which themselves are mostly derived from a study he conducted almost 30 years ago, to calculate the 2.2 million estimate reported in the Kleck Declaration.⁷⁴ Moreover, Dr. Kleck himself admitted that several of the surveys he referenced had “serious problems” and that they are not “very thorough or satisfactory for estimating DGU frequency.”⁷⁵ Further, 19 of the 21 surveys he cites were conducted between 1978 and 2000.⁷⁶ In a 2015 interview, Dr. Kleck claimed that DGU estimates from these surveys would need to be cut by half to account for the reduction in crime from the time when the surveys were conducted to the present.⁷⁷

F. Dr. Kleck’s claim that “[l]ess than 2% of gun crimes known to the police involve offenders firing over 10 rounds” is false and misleading

58. The Kleck Declaration’s claim that “[l]ess than 2% of gun crimes known to the police involve offenders firing over 10 rounds” is false and misleading. Dr. Kleck’s analysis is not based on all the gun crimes known to the police but rather on an analysis of 343 incidents in Jersey City reported in a study from 2003 entitled “Impact Of Handgun Types On Gun Assault Outcomes: A Comparison of Gun Assaults Involving Semiautomatic Pistols and Revolvers.”⁷⁸

⁷⁴ Appendix of Gary Kleck, “What Do CDC’s Surveys Say About the Prevalence of Defensive Gun Use?” *American Journal of Criminal Justice*, 2020.

⁷⁵ Kleck, Gary and Marc Gertz, “Armed Resistance to Crime: The Prevalence and Nature of Self-Defense with a Gun,” *Journal of Criminal Law and Criminology*, 1995, pp. 157-159.

⁷⁶ Kleck, Gary “What Do CDC’s Surveys Say About the Prevalence of Defensive Gun Use?” *American Journal of Criminal Justice*, 2020, pp. 12-14.

⁷⁷ Dr. Kleck stated in an interview that “the violent crime rate is about half now of what it was circa 1993, when we did that survey on defensive gun uses, so, best guess, the number of defensive gun uses would be about half. So, if it was 2.5 million then, it would be 1.2 million or so now.” See “Criminologist Gary Kleck on Guns, Crime, and Their Study, *Ari Armstrong Website*, November 7, 2017 (Available at: <http://ariarmstrong.com/2015/11/criminologist-gary-kleck-on-guns-crime-and-their-study/>).

⁷⁸ Reedy D.C and Christopher S. Koper., “Impact of Handgun Types on Gun Assault Outcomes: A Comparison of Gun Assaults Involving Semiautomatic Pistols and Revolvers,” *Injury Prevention*, 2003.

Further, the 343 incidents studied are all assaults with handguns and thus by design the study does not include any results for assault rifles or other long guns with LCMs. Thus, this study cannot possibly substantiate Dr. Kleck's claim that less than 2% of gun crimes known to the police involve offenders firing over 10 rounds.

I hereby declare that the above statement is true to the best of my knowledge and belief and that I understand it is made for use as evidence in court and is subject to penalty for perjury.

Dated this 6th day of February, 2023.



Lucy P. Allen